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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	Docket Nos. 50-247-LR and
)	50-286-LR
ENTERGY NUCLEAR OPERATIONS, INC.)	
)	
(Indian Point Nuclear Generating Units 2 and 3))	
)	February 26, 2010

**ENTERGY NUCLEAR OPERATIONS, INC. MOTION FOR SUMMARY DISPOSITION
OF NEW YORK STATE CONTENTION 17/17-A (PROPERTY VALUES)**

Pursuant to 10 C.F.R. § 2.1205, Applicant Entergy Nuclear Operations, Inc. (“Entergy”) respectfully requests that the Atomic Safety and Licensing Board (“Board”) grant summary disposition in favor of Entergy on New York State (“NYS”) consolidated Contention 17/17-A (“NYS-17/17-A”).¹

I. PRELIMINARY STATEMENT

NYS-17/17-A is premised on NYS’s misunderstanding of the National Environmental Policy Act (“NEPA”). As admitted, NYS-17/17-A alleges that the U.S. Nuclear Regulatory Commission (“NRC”) Draft Supplemental Environmental Impact Statement (“Draft SEIS”)² ignored the supposed positive impact on property values that allegedly would result from the denial of Entergy’s license renewal application (“LRA”) for Indian Point Unit 2 and Unit 3 (“IP2” and “IP3”).³ Without alleging any physical impact to the environment, NYS asserts that property values within 2 miles of the Indian Point Energy Center (“IPEC”) will increase once the

¹ This Motion is supported by a Statement of Material Facts on Which No Genuine Dispute Exists.

² NUREG-1437, Supp. 38, Draft Supplemental Environmental Impact Statement for License Renewal of Nuclear Plants Regarding Indian Point Nuclear Generating Unit Nos. 2 and 3 (Dec. 2008) (“Draft SEIS”).

³ Board Order (Ruling on New York State’s New and Amended Contentions) at 7 (June 16, 2009) (“Ruling on NYS New and Amended Contentions”) (unpublished).

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“concern” associated with the continued presence of an operating nuclear power facility and the associated increase in dry cask spent fuel storage is eliminated.⁴ NYS further speculates that the site will be cleared of all nuclear materials and facilities and will be available for development into an “attractive riverfront development” within ten years if the LRA is denied.⁵

Even if these assertions were properly supported—which they are not—summary disposition of NYS-17/17-A should be granted for three independent reasons. First, NEPA does not require consideration of the asserted impacts to nearby property values because these impacts are not directly linked to some physical impact to these properties. Instead, these impacts are associated with the public’s perception of risk and aversion to nuclear power facilities and spent fuel storage, which is not the province of NEPA.⁶ Second, NEPA does not require consideration of impacts that are dependent on numerous speculative actions by unknown third parties to develop the IPEC site and the surrounding land into an “attractive riverfront development” in 2025.⁷ Third, the omission alleged in this contention was rendered moot by the Draft SEIS. Accordingly, NYS-17/17-A must be dismissed as a matter of law.

⁴ New York State Notice of Intention to Participate and Petition to Intervene at 170-71 (Nov. 30, 2007) (“NYS Petition”)

⁵ Decl. of Stephen C. Sheppard attach. at 3 (Nov. 28, 2007) (Potential Impacts of Indian Point Relicensing on Property Values) (“Sheppard Report”).

⁶ *See Metro. Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766, 772-76 (1983) (holding that fear of an accident is not a cognizable injury under NEPA); Changes to Requirements for Environmental Review for Renewal of Nuclear Power Plant Operating Licenses, 64 Fed. Reg. 48,496, 48,502 (Sept. 3, 1999) (finding that NEPA does not require consideration of impacts on property values resulting from public’s perception of risk).

⁷ *See Soc’y Hill Towers Owners’ Ass’n v. Rendell*, 210 F.3d 168, 182 (3d Cir. 2000) (holding that NEPA requires consideration of cumulative impacts of proposed, and not merely contemplated, unlikely, or hard to anticipate future actions); *USEC, Inc. (Am. Centrifuge Plant)*, CLI-06-10, 63 NRC 451, 466-69 (2006) (rejecting need to consider alternative involving numerous future, yet-uncertain steps by unknown third parties).

II. STATEMENT OF FACTS

A. Submission and Admission of Contention NYS-17

NYS alleged in NYS-17 that Entergy's environmental report ("ER") ignored the supposed positive impact on land use and land values from the denial of the LRA.⁸ In this contention, NYS asserts that properties adjacent to the IPEC site would experience economic recovery if the LRA was denied and the site eventually cleared of all nuclear materials and facilities.⁹ This contention relies on the assumption that the IPEC site "would be decommissioned in 6 years such that the site would be available for unrestricted use and all the nuclear wastes at the site would be gone by 2025."¹⁰ To support its "economic recovery" theory, NYS relied on a report prepared by Dr. Stephen C. Sheppard, entitled "Potential Impacts of Indian Point Relicensing on Property Values," in which Dr. Sheppard purported to calculate the potential impact on nearby property values following decommissioning and removing all spent fuel from the IPEC site.¹¹ According to Dr. Sheppard, putting the remediated site to its "highest and best alternative use" would involve "a combination of attractive riverfront development that would be likely to include employment and other attractive locations," which, in Dr. Sheppard's view, would enhance nearby property values.¹²

The Board admitted NYS-17 as a "contention of omission," explaining that, "[i]n conducting its analysis of the impact of license renewal on land-use, Entergy should have

⁸ NYS Petition at 169; *Entergy Nuclear Operations, Inc.* (Indian Point Nuclear Generating, Units 2 & 3), LBP-08-13, 68 NRC 43, 113-15 (2008).

⁹ NYS Petition at 170.

¹⁰ *Id.* at 168.

¹¹ Sheppard Report at 3.

¹² *Id.*

considered the impact on real estate values.”¹³ The Board elaborated that 10 C.F.R. Part 51 does not limit consideration of significant changes in land use to tax-driven land-use changes.¹⁴

B. The Draft SEIS

The NRC Staff issued the Draft SEIS in December 2008. The Draft SEIS includes a discussion of the no-action alternative, including an assessment of the potential impacts on property values flowing from non-renewal of the IP2 and IP3 operating licenses.¹⁵ The NRC Staff relied on a recent study conducted by Levitan and Associates that evaluates various economic issues associated with retiring IPEC.¹⁶ Based on this study, the Draft SEIS observed that shutdown of “IP2 and IP3 may result in increased property values of the homes in the communities surrounding the site,” which would increase tax revenues, but that increase may not offset the corresponding loss of tax revenues resulting from the shutdown of IP2 and IP3.¹⁷ The Draft SEIS concluded that “[t]he combined increase in property values and increased taxes could have a noticeable effect on some area homeowners and businesses.”¹⁸

C. Submission and Admission of Contention NYS-17-A

Following issuance of the Draft SEIS, NYS submitted NYS-17-A, which again alleged that the Draft SEIS ignored the supposed positive impact to property values flowing from the no-

¹³ LBP-08-13, 68 NRC at 116.

¹⁴ *Id.* Specifically, 10 C.F.R. pt. 51, subpt. A, app. B, tbl. B-1 (“Table B-1”) indicates that “Socioeconomics, Offsite land use (license renewal term)” is a Category 2 issue. On that issue, Table B-1 contains the following Commission finding: “SMALL, MODERATE, OR LARGE. Significant changes in land use may be associated with population and tax revenue changes resulting from license renewal.”

¹⁵ Draft SEIS at 8-29 to 8-30.

¹⁶ *Id.* (citing Levitan & Assocs., Inc., *Indian Point Retirement Options, Replacement Generation, Decommissioning/Spent Fuel Issues, and Local Economic/Rate Impacts* (June 9, 2005) (prepared for the County of Westchester and the County of Westchester Public Utility Service Agencies)).

¹⁷ *Id.*

¹⁸ *Id.* at 8-30.

action alternative (*i.e.*, non-renewal of the IPEC operating licenses).¹⁹ NYS essentially repeated the allegations of the original NYS-17, only this time NYS criticized the NRC's Staff's Draft SEIS (rather than Entergy's ER).²⁰ As support for NYS-17-A, NYS referenced Dr. Sheppard's previously-filed report as well as a new report prepared by Dr. Sheppard entitled "Potential Impacts of Indian Point Relicensing with Delayed Site Reclamation."²¹ That report, like Dr. Sheppard's original report, alleged that nearby property values would increase following decommissioning and removal of all spent fuel from the IPEC site, but it further purported to calculate the impacts to property values based on delaying decommissioning and spent fuel removal for at least 60 years beyond the end of the proposed license renewal term.²²

In response to proposed contention NYS-17-A, Entergy argued, among other things, that the evaluation presented by the NRC in the Draft SEIS mooted NYS's original property value claims.²³ Having ruled that Entergy had not yet properly placed the mootness issue before the Board,²⁴ the Board admitted NYS-17-A and determined that the "amended contention updates the original to reflect that New York contends that the NRC Staff erred in a similar manner to Entergy and that the original contention is now relevant to the Draft SEIS, as well as to the ER."²⁵ Thus, the Board admitted NYS-17-A and consolidated it with NYS-17.²⁶

¹⁹ State of New York Contentions Concerning NRC Staff's Draft Supplemental Environmental Impact Statement at 15 (Feb. 27, 2009) ("NYS Draft SEIS Contentions").

²⁰ *Id.* at 15-16.

²¹ Supp. Decl. of Stephen C. Sheppard (Feb. 26, 2009) attach. ("Supplemental Sheppard Report").

²² *Id.* at 2-4.

²³ Answer of Entergy Nuclear Operations, Inc. Opposing New and Amended Environmental Contentions of New York State at 17-19 (Mar. 24, 2009).

²⁴ Board Order (Denying New York State's Motion to Strike) at 2-3 (June 16, 2009) (unpublished) ("Order Denying NYS Motion to Strike").

²⁵ Board Order (Ruling on New York State's New and Amended Contentions) at 8 (June 16, 2009).

²⁶ *Id.*

III. STATEMENT OF THE ISSUES

The Board first must determine whether NEPA requires the NRC to consider an alleged increase in property values where the purported impact is based on: (1) “concern” or perceived risk associated with the presence of an operating nuclear facility and spent fuel storage rather than any actual physical impact to nearby properties; and (2) speculation and erroneous assumptions regarding the decommissioning of the site, removal of spent fuel, and the subsequent development of the site. Because NYS fails to demonstrate—or even allege—any physical impact to those properties, the contention is deficient on its face under NEPA. Furthermore, NEPA does not require consideration of NYS’s speculative arguments about the theoretical redevelopment of the IPEC site to a potentially more desirable use by some unspecified party at some remote time in the distant future.

Even if NEPA somehow required the analysis NYS seeks, the Board next must decide whether the Draft SEIS discussion of potential changes in property values cures the omission alleged in NYS-17/17-A. As explained below, the Draft SEIS renders NYS-17/17-A moot. Accordingly, the contention should be dismissed.

IV. APPLICABLE LEGAL STANDARDS

A. Legal Standards for Summary Disposition

Entergy discussed the legal standards governing summary disposition of an admitted contention in its prior pleadings and incorporates its discussion of those standards by reference here.²⁷ In short, summary disposition is required when “there is no genuine issue as to any

²⁷ See Applicant’s Answer Opposing New York State’s Motion for Summary Disposition on Contention NYS-16/16A (Regarding Use of ATMOS Module of MACCS2 in SAMA Analyses) at 12 (Sept. 21, 2009); Applicant’s Motion for Summary Disposition of New York State’s Contention 8 (Electrical Transformers) at 15-17 (Aug. 14, 2009).

material fact and . . . the moving party is entitled to a decision as a matter of law.”²⁸ Submission of an expert opinion does not preclude summary disposition,²⁹ and parties must “clearly and thoroughly explain the basis for the expert’s opinion.”³⁰ Further, a party cannot defeat summary disposition by relying only on “subjective belief or unsupported speculation.”³¹

The Commission also has emphasized the distinction between “contentions of omission” and contentions that raise substantive challenges to particular information in a license application.³² Where a contention alleges the omission of particular information or an issue from an application and that information is later supplied by the applicant or considered by the NRC Staff in an environmental impact statement (“EIS”), the contention is moot.³³ A motion for summary disposition is an appropriate means for a party to seek dismissal of a moot contention.³⁴

B. Legal Standards for NRC NEPA Reviews

NEPA requires that federal agencies prepare an EIS for “major Federal actions significantly affecting the quality of the human environment.”³⁵ NEPA does not mandate substantive results; rather, it imposes procedural restraints on agencies, requiring them to take a “hard look” at the environmental impacts of a proposed action and reasonable alternatives to that

²⁸ 10 C.F.R. § 2.710(d)(2).

²⁹ *Duke Cogema Stone & Webster* (Savannah River Mixed Oxide Fuel Fabrication Facility), LBP-05-4, 61 NRC 71, 81 (2005) (“DCS”) (“Conflicting expert opinions . . . do not necessarily preclude summary disposition” as “the nonmoving party cannot avoid summary judgment by presenting an unsupported opinion of an expert.”). *See also Raskin v. Wyatt Co.*, 125 F.3d 55, 66 (2d Cir. 1997) (holding that mere proffer of expert testimony is not a “talisman against summary judgment”).

³⁰ *DCS*, LBP-05-4, 61 NRC at 81.

³¹ *Id.* at 80 (quoting *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 589-90 (1993)). *See also Brown v. City of Houston*, 337 F.3d 539 (5th Cir. 2003) (“Unsubstantiated assertions, improbable inferences, and unsupported speculation are not sufficient to defeat a motion for summary judgment.”).

³² *See Duke Energy Corp.* (McGuire Nuclear Station, Units 1 & 2; Catawba Nuclear Station, Units 1 & 2), CLI-02-28, 56 NRC 373, 382–83 (2002).

³³ *Id.*

³⁴ *USEC*, CLI-06-10, 63 NRC at 444-45; *see also* Order Denying NYS Motion to Strike at 2-3.

³⁵ 42 U.S.C. § 4332(2)(C) (2006).

action.³⁶ This “hard look” is subject to a “rule of reason.”³⁷ In accordance with the rule of reason, an EIS “need not include every environmental effect that could potentially result from the action; but rather ‘may be limited to effects which are shown to have some likelihood of occurring.’”³⁸ In particular, NEPA does not require consideration of future land use development that is “unlikely or difficult to anticipate.”³⁹

Moreover, NEPA is concerned with actual physical impacts to the environment.⁴⁰ As the Supreme Court in *Metropolitan Edison* explained, the “theme of [NEPA] is sounded by the adjective ‘environmental,’” which means that NEPA does not require an agency to assess every impact on a project, but only those that have a “reasonably close causal relationship” with “a change in the physical environment.”⁴¹ In *Metropolitan Edison*, the Supreme Court rejected a claim that NEPA required that the NRC consider allegations that the restart of one of the reactors at Three Mile Island after another unit at the site had malfunctioned would result in severe psychological health damage to nearby residents. The Supreme Court found that fear arising from the “risk” of a nuclear accident was not an effect caused by a change in the physical environment and, thus, did not warrant consideration under NEPA.⁴² Specifically, the Supreme

³⁶ See *La. Energy Servs., L.P.* (Claiborne Enrichment Ctr.), CLI-98-3, 47 NRC 77, 87-88 (1998); see also *Balt. Gas & Elec. Co. v. Natural Res. Def. Council, Inc.*, 462 U.S. 87, 97-98 (1983) (NEPA requires agency to take a “hard look” at environmental consequences prior to taking major action).

³⁷ *Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), LBP-05-19, 62 NRC 134, 167; see also *Dep’t of Transp. v. Pub. Citizen*, 541 U.S. 752, 767-69 (2004) (rule of reason is inherent in NEPA and its implementing regulations).

³⁸ *Hydro Res., Inc.* (P.O. Box 777, Crownpoint, N.M.), LBP-04-23, 60 NRC 441, 447 (2004).

³⁹ *Rendell*, 210 F.3d at 182.

⁴⁰ See *Metro. Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766, 772-73 (1983).

⁴¹ *Id.* at 772 & 773.

⁴² *Id.* at 775-76.

Court held that the causal chain between the change in the environment and the “effect” at issue was “too attenuated.”⁴³

Consistent with this well-established judicial precedent, Council on Environmental Quality (“CEQ”) regulations make clear that an EIS need only discuss economic or social impacts if they are interrelated with physical environmental effects.⁴⁴ Likewise, federal courts hold that socioeconomic impacts are only relevant under NEPA when they are “interrelated” with “physical environmental effects.”⁴⁵ In fact, this principle has been specifically applied in the context of allegations involving changes to property values. For example, in *Olmstead Citizens for a Better Community v. United States*, the district court found that the Bureau of Prisons was entitled to summary judgment on a claim asserting that NEPA required the agency to consider the impact on nearby property values resulting from a decision to convert a hospital facility to a medical center for federal prisoners.⁴⁶ The court ruled that summary judgment was warranted because NEPA, “as a matter of law,” does not require evaluation of potential property value changes when “the *threshold requirement* of a primary impact on the *physical environment* is missing.”⁴⁷

The Commission similarly has concluded that the NRC need not consider socioeconomic effects that are not “directly related to the physical environment.”⁴⁸ Accordingly, in considering socioeconomic impacts under NEPA, the Commission, like the courts, distinguishes between

⁴³ *Id.* at 771, 773.

⁴⁴ 40 C.F.R. § 1508.14; *see also* 10 C.F.R. § 51.14(b) (adopting the CEQ definition in 40 C.F.R. § 1508.14).

⁴⁵ *Tongass Conservation Soc’y v. Cheney*, 924 F.2d 1137, 1144 (D.C. Cir. 1991) (citing 40 C.F.R. § 1508.14); *Hammond v. Norton*, 370 F. Supp. 2d 226, 243 (D.D.C. 2005) (“Only when socioeconomic effects somehow result from a project’s environmental impact must they be considered.”).

⁴⁶ *Olmstead Citizens for a Better Cmty. v. United States*, 606 F. Supp. 964, 973 (D. Minn. 1985), *aff’d*, 793 F.2d 201 (8th Cir. 1986).

⁴⁷ *Id.* at 974 (emphasis added).

⁴⁸ Changes to Requirements for Environmental Review for Renewal of Nuclear Power Plant Operating Licenses, 64 Fed. Reg. at 48,502.

socioeconomic impacts that arise directly from a physical impact to the environment and those that do not. For example, in the reactor license renewal context, the Commission found that the Generic Environmental Impact Statement (“GEIS”)⁴⁹ was not required to consider the effect that spent fuel shipments would have on property values because these impacts would arise from the public’s perception of risk rather than from an impact to the physical environment.⁵⁰

V. ARGUMENT

A. NYS’s Property Value Claims are Immaterial under NEPA.

NEPA does not require the NRC to consider the supposed potential increase in property values that NYS alleges would follow from denial of the LRA. Stripped to its core, NYS-17/17-A is about the public’s perception of risk. NYS speculates that public “concern” about a nuclear facility and storage of spent fuel will be eliminated—and land values correspondingly will increase—if the LRA is denied because nearby land owners and purchasers “can contemplate” that the site will be cleared of all nuclear materials and facilities by 2025 and redeveloped into something more “beneficial.”⁵¹ Not only is that scenario dependent on numerous speculative actions to be taken by unknown third parties to redevelop the IPEC site and the surrounding properties into something more attractive to nearby landowners, but it also fails to satisfy the NEPA requirement of directly linking the purported property value changes to actual impacts to those properties.

⁴⁹ NUREG-1437, Generic Environmental Impact Statement for License Renewal of Nuclear Plants (May 1996) (“GEIS”).

⁵⁰ Changes to Requirements for Environmental Review for Renewal of Nuclear Power Plant Operating Licenses, 64 Fed. Reg. at 48,502. The GEIS evaluation of socioeconomic impacts is consistent with the NEPA principle that socioeconomic impacts only need be discussed if they are directly related to physical environmental effects. See GEIS at 4-99 (explaining that “only those [socioeconomic impacts] directly affecting the natural and built environment are carried forward to the decision to renew an operating license”).

⁵¹ NYS Draft SEIS Contentions at 15, 16; NYS Petition at 168, 170.

NEPA requires consideration of potential property value changes only if such effects are (1) directly linked to impacts to the physical environment;⁵² and (2) reasonably likely to actually occur as postulated by NYS.⁵³ NYS-17/17-A fails on both these fronts.

1. NYS's Postulated Changes in Property Values Are Not Directly Related to Impacts to the Physical Environment.

NYS has not provided any evidence demonstrating that the alleged impact on nearby properties that supposedly flows from the no-action alternative is interrelated with *any* physical impact to those properties. In fact, NYS's pleadings make clear that the alleged socioeconomic impact is really about the perceived risk associated with the IPEC site.⁵⁴ Both NYS and Dr. Sheppard attempt to link the alleged property value impact to IPEC by reference to a journal article entitled "An Interregional Hedonic Analysis of Noxious Facility Impacts on Local Wages and Property Values,"⁵⁵ but this article specifically attributes the impact to the "risk" of an accident and the "public aversion" to nuclear plants.⁵⁶ That risk is not cognizable under NEPA. In *Metropolitan Edison*, the Supreme Court made clear that "NEPA does not require agencies to evaluate the effects of risk, *qua* risk" because "a risk of an accident is *not* an effect on the

⁵² See *Metro. Edison*, 460 U.S. at 774; *Tongass*, 924 F.2d at 1144 (explaining that socioeconomic and physical environmental effects must be interrelated); *Hammond*, 370 F. Supp. 2d at 243 (indicating that socioeconomic factors may be considered under NEPA only when socioeconomic and physical environmental effects are interrelated).

⁵³ *Rendell*, 210 F.3d at 182 (holding that consideration of cumulative impact is required only if certainty of a project's completion is high).

⁵⁴ See NYS Draft SEIS Contentions at 19 (arguing that the property value "impact is *from the facility itself*") (emphasis added).

⁵⁵ *Id.* at 19 (citing David Clark and Leslie Nieves, *An Interregional Hedonic Analysis of Noxious Facility Impacts on Local Wages and Property Values*, 27 J. of Env'l Econ. & Mgmt. 235 (1994) ("Interregional Hedonic Analysis"); Sheppard Report at 3).

⁵⁶ Interregional Hedonic Analysis at 236 n.4 & 250 (emphasis added) (excerpt attached hereto as Exh. 1). Dr. Sheppard also relies on an article entitled "Externalities of Nuclear Power Plants: Further Evidence." Sheppard Report at 4 n.4 (citing Sherman Folland and Robin Hough, *Externalities of Nuclear Power Plants: Further Evidence*, 40 J. of Reg'l Sci. 735 (2000) ("Externalities of Nuclear Power Plants")). Notably, the authors of that article conclude that their "data support the proposition that a *public perception* of nuclear risk causes a change in land prices." *Externalities of Nuclear Power Plants* at 749 (emphasis added) (excerpt attached hereto as Exh. 2).

physical environment.”⁵⁷ Here, as in *Metropolitan Edison*, NYS has not made the requisite demonstration of a “reasonably close causal relationship between a change in the physical environment and the effect at issue” (*i.e.*, the causal chain between non-renewal of the IPEC operating licenses and the alleged property value effect is “too attenuated”).⁵⁸ Therefore, “the threshold requirement of a primary impact on the physical environment is missing” and, as a matter of law, summary disposition is proper.⁵⁹

NYS has attempted to weave in a physical environmental impact by pointing to supposed spent fuel storage-related impacts, arguing that additional dry cask storage will be required during license renewal and that this storage “will create further impacts on the value and potential use of adjacent lands.”⁶⁰ That argument, however, is foreclosed by NRC regulations. The NRC’s generic finding regarding the environmental impacts of onsite spent fuel storage is codified as a Category 1 issue in Table B-1 of 10 C.F.R. Part 51. Table B-1 expressly provides that the “expected increase in the volume of spent fuel from an additional 20 years of operation can be safely accommodated on site with *small environmental effects* through dry or pool storage at *all plants*.”⁶¹ The GEIS makes clear that these findings cover both radiological and non-

⁵⁷ *Metro. Edison*, 460 U.S. at 775 (emphasis in original). Further, this is not a contention that involves a “situation where an agency is asked to consider effects that will occur if a risk is realized.” *Id.* at n.9. As explained in the Draft SEIS, the risk-based impacts to offsite property value are considered in the severe accident mitigation alternative (“SAMA”) evaluation. See Draft SEIS at G-27 to -28.

⁵⁸ *Metro. Edison*, 460 U.S. at 773, 774; see also Changes to Requirements for Environmental Review for Renewal of Nuclear Power Plant Operating Licenses, 64 Fed. Reg. at 48,502 (citing *Metro. Edison*, 460 U.S. at 766).

⁵⁹ *Olmstead*, 606 F. Supp. at 974; see also *Ashley Creek Phosphate Co. v. Norton*, 420 F.3d 934, 943 (9th Cir. 2005) (holding that nothing in NEPA “suggests that an EIS must address an economic concern that is not tethered to the environment”).

⁶⁰ NYS Draft SEIS Contentions at 16.

⁶¹ Table B-1 (emphasis added); see also The Attorney General of Commonwealth of Massachusetts, The Attorney General of California; Denial of Petitions for Rulemaking, 73 Fed. Reg. 46,204, 46,208 & 46,211 (Aug. 8, 2008) (concluding that the Commission’s findings related to the storage of spent nuclear fuel in pools, as set forth in NUREG-1437 and Table B-1 of Appendix B to Subpart A of 10 C.F.R. Part 51, “remain valid,” and “[t]hus, the NRC has met and continues to meet its obligations under NEPA”), *aff’d sub nom. New York v. NRC*, 589 F.3d 551 (2d Cir. 2009).

radiological impacts from spent fuel storage and rejects the need for further consideration of mitigation alternatives at the license renewal stage.⁶² Furthermore, because the GEIS found the impacts to the physical environment from spent fuel storage to be insignificant, there is no need to consider tangential, economic impacts to property values.⁶³

Table B-1 is not subject to collateral attack in this proceeding.⁶⁴ Absent a waiver, “no rule or regulation of the Commission . . . is subject to attack by way of discovery, proof, argument, or other means in any adjudicatory proceeding.”⁶⁵ Thus, in accordance with 10 C.F.R. § 2.335(a), NYS may not offer proof or argument in this proceeding regarding the environmental impacts of onsite spent fuel storage during the original or extended period of operation, including the extent to which such impacts allegedly affect property values or might be mitigated under the

⁶² See GEIS at 6-85 to -86. This assessment in the GEIS considers land use and socioeconomic impacts. See *id.* at 6-84 (discussing land use and socioeconomic impacts from existing and future dry cask storage facilities).

⁶³ See *Olmstead*, 793 F.2d at 206 (noting that NEPA does not require “that an agency consider impacts not sufficient to trigger preparation of an [EIS] just because such a statement was required for other unrelated reasons”).

⁶⁴ See LBP-08-13, 68 NRC at 185-86 (rejecting spent fuel-related contention because spent fuel storage issues are Category 1 environmental issues and, therefore, are not subject to attack in NRC license renewal proceedings); see also *Fla. Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 & 4), CLI-01-17, 54 NRC 3, 23 (2001) (“Part 51’s license renewal provisions cover environmental issues relating to onsite spent fuel storage generically” and “[a]ll such issues . . . fall outside the scope of license renewal proceedings.”).

⁶⁵ 10 C.F.R. § 2.335(a).

no-action alternative.⁶⁶ Accordingly, NYS may not avoid summary disposition on NYS-17/17-A by attempting to link their property value allegations to spent fuel storage-related impacts.⁶⁷

2. NYS-17/17-A Depends on Pure Speculation and Faulty Premises.

Summary disposition of this contention also is proper because the alleged property value impacts are remote and speculative. NYS bases this contention on the unrealistic (and likely impossible) assumption that all spent fuel will be removed and the site will be decommissioned and ready to be transformed into an “attractive riverfront development” by 2025.⁶⁸ Dr. Sheppard provides no factual support for this claim. In fact, this erroneous conclusion is *not* part of Dr. Sheppard’s expert opinion, but rather, was explicitly dictated to him.⁶⁹ In turn, NYS provides no legal or factual basis for this assumption. Accordingly, there is *no* factual support for this assumption—an assumption that forms the basis for Dr. Sheppard’s conclusions and the contention as a whole. As a matter of pure speculation, this assumption cannot withstand a motion for summary disposition.⁷⁰

⁶⁶ To the extent that NYS may attempt to argue that NYS-17/17-A raises issues regarding spent fuel storage *after the period of extended operation*, those claims are similarly based on public aversion to spent fuel storage and are not directly linked to impacts to the physical environment. Furthermore, those claims are unduly speculative and have been mooted in the Draft SEIS, as discussed *infra* in Sections V.A.2 and V.B, respectively. Moreover, notwithstanding the Board’s recent certification to the Commission of questions regarding the continued validity of the Waste Confidence Rule, Entergy continues to believe any claims relating to the environmental impacts of spent fuel storage *after the period of extended operation* also constitute impermissible challenges to existing Commission regulations in 10 C.F.R. § 51.23. Nonetheless, given the numerous independent reasons for granting summary disposition in Entergy’s favor (*i.e.*, the lack of any physical impacts resulting from spent fuel storage as well as the speculative nature and mootness of NYS-17/17-A), the Board need not address that issue here.

⁶⁷ NYS also may not expand their contention to include additional bases in an attempt to link the purported property value increase to some other physical environmental impact. *See S. Nuclear Operating Co. (Early Site Permit for Vogtle ESP Site)*, LBP-08-2, 67 NRC 54, 78 (2008) (refusing to consider new bases that were included in an answer to summary disposition motion and were outside the scope of the original contention).

⁶⁸ NYS Draft SEIS Contentions at 15-17; Sheppard Report at 3.

⁶⁹ *See* Supp. Sheppard Report at 1-3. In fact, Dr. Sheppard clearly states “*I have been told to assume that the ‘no action’ option . . . involves operating the power plant at present levels until 2015, and then commencing a process of site reclamation so that by 2025 the site can be developed to its most efficient use.*” *Id.* at 2 (emphasis added). Thus, this issue raises no “battle of the experts.”

⁷⁰ *See Amorgianos v. Nat’l R.R. Passenger Corp.*, 303 F.3d 256, 269 (2d Cir. 2002) (finding no abuse of discretion in striking expert testimony based on faulty premise and affirming summary judgment for lack of

The “attractive riverfront development” scenario envisioned by Dr. Sheppard is not unlike the “industrial heaven” postulated by a petitioner in the Commission’s *USEC* decision.⁷¹ In that case, the petitioner argued that the no-action alternative should have considered the beneficial job-creation impacts that allegedly would result if the proposed uranium enrichment facility site was used for some other alternative industrial development.⁷² The rationale underlying the Commission’s rejection of that petitioner’s contention applies equally here:

[Petitioner’s] contention puts forth the idea of an “industrial heaven” employing thousands at the . . . site if the [facility] license is denied and if the site “were cleaned up.” Yet not only did the contention lack support for this claim, as the Board found, but the “no-action” alternative “is most simply viewed as maintaining the status quo.” For the “industrial heaven” idea to become reality would involve numerous future, yet-uncertain steps by unknown third parties.⁷³

Given that NYS has provided no evidence that any known entity is likely to replace the IPEC site with an “attractive riverfront development” or some other use presumably more to the liking of nearby property owners simply as a result of the no-action alternative, summary disposition on NYS-17/17-A is clearly warranted.

expert evidence to support theory); *Tyger Constr. Co. v. Pensacola Constr. Co.*, 29 F.3d 137, 142 (4th Cir. 1994) (“An expert’s opinion should be excluded when it is based on assumptions which are speculative and are not supported by the record.”); *Raskin*, 125 F.3d at 67-68 (affirming summary judgment because opposing party’s expert report was premised on flawed assumptions); *Yankee Atomic Elec. Co.* (Yankee Nuclear Power Station), LBP-96-18, 44 NRC 86, 103 (1996) (granting motion for summary disposition where intervenor’s opposition was based on expert opinion founded on unsupported assumptions that conflicted with decommissioning plan); see also *Rendell*, 210 F.3d at 182 (holding that NEPA does not require consideration of future land use development—a “mega” entertainment complex—that is “unlikely or difficult to anticipate”). Cf. *S. Nuclear Operating Co.* (Early Site Permit for Vogtle ESP Site), CLI-10-5, slip op. at 12 (Jan. 7, 2010) (holding that NRC need not consider impacts related to dredging of navigation channel absent an actual proposal for such dredging).

⁷¹ *USEC*, CLI-06-10, 63 NRC at 466-69.

⁷² *Id.* at 467.

⁷³ *Id.* at 468 (internal citations omitted:).

Furthermore, NYS's argument is all the more unrealistic because they divine that this redevelopment will somehow happen by 2025; which is essentially impossible.⁷⁴ As NYS is aware, NRC regulations require decommissioning to be complete within *60 years* of permanent cessation of operations, *not* the 10 years that NYS-17/17-A assumes.⁷⁵ Entergy adopted this 60-year decommissioning timeframe in the IPEC site-specific program for managing spent fuel following permanent cessation of operations and preliminary decommissioning cost estimate.⁷⁶ This schedule (which does *not* assume the granting of the LRA) projects complete removal of all fuel from the IPEC site in *2045* and complete site remediation and license termination in *2073*.⁷⁷ Consistent with NRC regulations and Entergy's planning documents, the Draft SEIS explicitly recognizes that "[f]ull dismantling of structures and decontamination of the site may not occur for up to 60 years after plant shutdown."⁷⁸ NYS disregards this regulation in favor of wishful thinking that "decommissioning could occur as quickly as 10 years after shutdown" because "NRC certainly has the power to order more rapid decommissioning."⁷⁹ That bare speculation cannot sustain this contention.

Summary disposition is particularly appropriate given that NYS, in its Answer to a late-filed contention recently proposed by Clearwater, effectively conceded that the above underlying

⁷⁴ Under the no-action alternative NYS apparently assumes that all spent fuel would be removed ten years after the original licenses expire, but in the license renewal scenario they assume that all spent fuel would be removed no less than sixty years after the renewed licenses expire. *See* Supp. Sheppard Report at 2. NYS cannot have it both ways. The length of time spent fuel remains onsite is not dependent on license renewal, but on the availability of a federal repository, which is clearly beyond the scope of this proceeding.

⁷⁵ 10 C.F.R. § 50.82(a)(3).

⁷⁶ Letter from J. E. Pollock, Entergy, to NRC Document Control Desk attach. 1, Table 7 (Oct. 23, 2008) (Unit No. 1 and 2, 10 CFR 50.54(bb) Program for Maintenance of Irradiated Fuel), *available at* ADAMS Accession No. ML083040378; *id.* encl. 2, fig. 1, at 26 (Preliminary Decommissioning Cost Analysis for the Indian Point Energy Center, Unit 2).

⁷⁷ *Id.* encl. 2, fig. 1, at 26.

⁷⁸ Draft SEIS at 8-25.

⁷⁹ State of New York Combined Reply to Entergy Nuclear Operations, Inc., and NRC Staff in Support of Contentions 12-A, 16-A, 17-A, 33, and 34, at 16 (Mar. 31, 2009).

assumptions of NYS-17/17-A are invalid. In that Answer, NYS stated that if the LRA were denied, the site would *not* be available for unrestricted use by 2025 because there is no longer reasonable assurance that a repository will be available to accept the site's nuclear waste within that timeframe.⁸⁰ Therefore, even if the NRC were to order more rapid decommissioning of IP2 and IP3, then NYS acknowledges that spent fuel will remain on site well past 2025. In light of the clear inconsistency in NYS's pleadings, summary disposition of NYS-17/17-A should be granted in favor of Entergy.

B. The NRC Staff's Draft SEIS Renders Contention NYS-17/17-A Moot.

Although not required by NEPA, the Draft SEIS nonetheless discusses property value impacts within the context of the no-action alternative.⁸¹ Thus, even apart from the fatal NEPA deficiencies at the heart of NYS-17/17-A, summary disposition is proper because the omission alleged in this contention was rendered moot by the Draft SEIS.

As admitted by the Board, NYS-17/17-A is a contention of omission regarding consideration of property value impacts.⁸² That omission has been cured by the Draft SEIS. The Draft SEIS discusses potential impacts on property values resulting from the non-renewal of

⁸⁰ Answer of the State of New York to Hudson River Sloop Clearwater, Inc.'s Petition Presenting Supplemental Contentions EC-7 and SC-1 Concerning Storage of High-Level Radioactive Waste at Indian Point at 11 & 17 (Nov. 19, 2009) (stating that "it is no longer realistic to assume that any wastes previously generated or to be generated at the Indian Point facility will be removed from the site within 30 years after the operation of the reactors" and that "there is no longer reasonable assurance that a permanent mined repository for high-level radioactive waste will be constructed and operating by 2025"); *see also* Board Order (Certification to the Commission of a Question Relating to the Continued Viability of 10 C.F.R. § 51.23(b) Arising From Clearwater's Motion for Leave to Admit New Contentions) at 24 (Feb. 12, 2010) (unpublished) (noting that "that the construction of a repository for HLW at Yucca Mountain is no longer considered as a viable option" and that "no other alternative has been identified at this time").

⁸¹ Draft SEIS at 8-29 to 8-30.

⁸² LBP-08-13, 68 NRC at 116 (admitting NYS-17 as a contention of omission); *see also* Ruling on NYS New and Amended Contentions at 8 (admitting NYS-17-A "to reflect that New York contends that the NRC Staff erred in a similar manner to Entergy and that the original contention is now relevant to the Draft SEIS, as well as to the ER").

the IP2 and IP3 operating licenses.⁸³ In so doing, the NRC Staff relies on a recent study conducted by Levitan and Associates that evaluates various economic issues associated with retiring IPEC.⁸⁴ In this regard, the Draft SEIS now recognizes that shutdown of “IP2 and IP3 may result in increased property values of the homes in the communities surrounding the site.”⁸⁵ The Draft SEIS further explains that the increase in property values would cause some increase in tax revenues, but it concludes that this increase may not be sufficient to offset the loss of tax revenues resulting from the shutdown of IP2 and IP3.⁸⁶ Finally, the Draft SEIS observes that “[t]he combined increase in property values and increased taxes could have a noticeable effect on some area homeowners and businesses.”⁸⁷

Based on this information, the Draft SEIS cured the omission alleged in NYS-17/17-A. As the Licensing Board explained recently in the *South Texas* combined license proceeding, “the Commission has not established any prerequisite, such as assessment of the information submitted, that must be met before a finding of mootness can be made”—“[r]ather, submittal of the information is the basis for the finding of mootness.”⁸⁸ However, even if some assessment of the Draft SEIS was necessary, given that nothing in NEPA requires that the NRC put a dollar value on the impact or conduct a new study of the highly speculative scenario that NYS suggests,

⁸³ Draft SEIS at 8-29 to 8-30.

⁸⁴ *Id.* (citing Levitan & Assocs., Inc., *Indian Point Retirement Options, Replacement Generation, Decommissioning/Spent Fuel Issues, and Local Economic/Rate Impacts* (June 9, 2005) (prepared for the County of Westchester and the County of Westchester Public Utility Service Agencies)).

⁸⁵ *Id.* Although not material to resolution of NYS-17/17-A, the Draft SEIS also discusses offsite land use trends and concludes that there would be no housing impacts, population-related land use impacts, and tax-revenue-related impacts during the license renewal term beyond what is currently being experienced. *See id.* at 2-117 to -119, 4-39 & 4-41.

⁸⁶ *Id.* at 8-29 to 8-30.

⁸⁷ *Id.* at 8-30.

⁸⁸ *S. Tex. Project Nuclear Operating Co.* (S. Tex. Project Units 3 & 4); LBP-09-21, slip op. at 11 n.59 (Aug. 27, 2009).

the discussion in the Draft SEIS is sufficient.⁸⁹ Because the Draft SEIS discussion of the no-action alternatives now addresses the potential for positive impacts on property values, NYS-17/17-A, as admitted by the Board, is now moot and must be dismissed.⁹⁰ Accordingly, Entergy is entitled to a decision as a matter of law.

VI. CONCLUSION

For all the foregoing reasons, the Board should grant summary disposition of NYS-17/17-A in Entergy's favor.

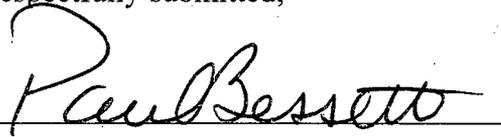
⁸⁹ See *Town of Norfolk v. U.S. EPA*, 761 F. Supp. 867, 887-88 (D. Mass. 1991), *aff'd without opinion*, 960 F.2d 143 (1st Cir. 1992) (upholding EIS that did not quantify property value decline due to proposed action where EIS stated that such decline was unquantifiable).

⁹⁰ See *McGuire*, CLI-02-28, 56 NRC at 382-83.

CERTIFICATION OF CONSULTATION UNDER 10 C.F.R. § 2.323(b)

Counsel for Entergy, NYS, and the NRC Staff have conferred but are unable to resolve the issues raised in this motion. NYS does not contest Entergy's ability to file the instant motion, but believes that NYS-17/17-A is well founded and should proceed to an evidentiary hearing. NYS will review the as-filed motion and respond as appropriate. The NRC Staff does not oppose this motion and will respond as appropriate.

Respectfully submitted,



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COUNSEL FOR ENTERGY NUCLEAR
OPERATIONS, INC.

Dated in Washington, D.C.
this 26th day of February 2010

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	Docket Nos. 50-247-LR and
ENERGY NUCLEAR OPERATIONS, INC.)	50-286-LR
(Indian Point Nuclear Generating Units 2 and 3))	
	February 26, 2010

STATEMENT OF MATERIAL FACTS ON WHICH NO GENUINE DISPUTE EXISTS

Applicant Entergy Nuclear Operations, Inc. ("Entergy") submits this statement of undisputed material facts in support of its Motion for Summary Disposition of NYS-17/17-A.

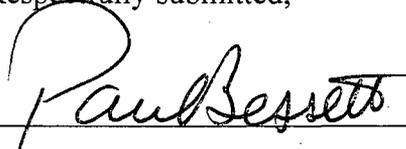
1. Entergy submitted an Environmental Report ("ER") with its initial License Renewal Application ("LRA") on April 23, 2007. Letter from Fred Dacimo, Entergy, to NRC Document Control Desk (Apr. 23, 2007), *available at* ADAMS Accession No. ML071210512; LRA App. E, *available at* ADAMS Accession No. ML071210530 (Applicant's Environmental Report, Operating License Renewal Stage, Indian Point Energy Center).
2. On November 30, 2007, New York State ("NYS") filed NYS-17 as part of its petition to intervene, contending that the ER improperly ignores the supposed positive impact on land-use and land values flowing from the denial of the LRA. NYS alleged that, in case the LRA is denied, properties adjacent to the Indian Point Energy Center ("IPEC") site would experience economic recovery upon the availability of the IPEC site for unrestricted use by 2025. New York State Notice of Intention to Participate and Petition to Intervene at 167-169 (Nov. 30, 2007) ("NYS Petition").
3. In its Memorandum and Order of July 31, 2008, the Atomic Safety and Licensing Board ("Board") admitted NYS-17 as a contention of omission. *Entergy Nuclear Operations, Inc.* (Indian Point Nuclear Generating, Units 2 & 3), LBP-08-13, 68 NRC 43, 115-16 (2008).
4. In December 2008, the NRC Staff issued NUREG-1437, Supplement 38, Draft Supplemental Environmental Impact Statement for License Renewal of Nuclear Plants Regarding Indian Point Nuclear Generating Unit Nos. 2 and 3 (Dec. 2008) ("Draft SEIS").
5. Within the context of the no-action alternative, the Draft SEIS discusses potential impacts on nearby property values that might result from non-renewal of the Indian Point Unit 2 and Unit 3 ("IP2" and "IP3") operating licenses. Draft SEIS at 8-29 to 8-30.

6. The NRC Staff discussion of impacts to property values relies on a study conducted by Levitan and Associates that evaluates various economic issues associated with retiring IPEC. Draft SEIS at 8-29 to 8-30 (citing Levitan & Assocs., Inc., *Indian Point Retirement Options, Replacement Generation, Decommissioning/Spent Fuel Issues, and Local Economic/Rate Impacts* (June 9, 2005)).
7. The Draft SEIS states that shutdown of “IP2 and IP3 may result in increased property values of the homes in the communities surrounding the site.” Draft SEIS at 8-29 to 8-30.
8. The Draft SEIS states that an increase in property values would cause some increase in tax revenues, but it notes that increased tax revenues might not be sufficient to offset the loss of tax revenues resulting from the shutdown of IP2 and IP3. Draft SEIS at 8-29 to 8-30. The Draft SEIS further states that that “[t]he combined increase in property values and increased taxes could have a noticeable effect on some area homeowners and business.” Draft SEIS at 8-30.
9. On February 27, 2009, NYS filed contention NYS-17-A, contending that the Draft SEIS improperly ignores the supposed positive impacts on land-use and land values flowing from the denial of the LRA. NYS repeated its assertion that properties adjacent to the IPEC site would experience economic recovery upon the availability of the IPEC site for unrestricted use by 2025 in case the LRA is denied. State of New York Contentions Concerning NRC Staff’s Draft Supplemental Environmental Impact Statement at 14-15 (Feb. 27, 2009) (“NYS Draft SEIS Contentions”).
10. In its Memorandum and Order dated June 16, 2009, the Board admitted NYS-17-A to update NYS-17 “to reflect that New York contends that the NRC Staff erred in a similar manner to Entergy and that the original contention is now relevant to the Draft SEIS, as well as to the ER.” Board Order (Ruling on New York State’s New and Amended Contentions) at 8 (June 16, 2009).
11. NYS bases NYS-17/17-A on its assertion that, under the no-action alternative (*i.e.*, assuming the IP2 and the IP3 licenses were not renewed), the plants would be decommissioned in six years, and all nuclear waste would be removed and the site would be available for unrestricted use by 2025. NYS Draft SEIS Contentions at 15.
12. As support for NYS-17/17-A, NYS references two reports by Dr. Stephen C. Sheppard (*Potential Impacts of Indian Point Relicensing on Property Values* (“Sheppard Report”) and *Potential Impacts of Indian Point Relicensing with Delayed Site Reclamation* (“Supplemental Sheppard Report”) in which he concludes that properties adjacent to the IPEC site would experience economic recovery under the no-action alternative and denial of the LRA. NYS Draft SEIS Contentions at 18-20.
13. Dr. Sheppard assumes that the denial of the LRA will result in decommissioning the site, removing all spent fuel, and then putting the remediated site to its “highest and best alternative use,” which would involve “a combination of attractive riverfront development that would be likely to include employment and other attractive locations.” Sheppard Report at 3.

14. In addition, Dr. Sheppard assumes that the denial of the LRA “involves operating the power plant at present levels until 2015, and then commencing a process of site reclamation so that by 2025 the site can be developed to its most efficient use.” Supplemental Sheppard Report at 2.
15. As further support for NYS-17/17-A, NYS and Dr. Sheppard rely on a journal article entitled *An Interregional Hedonic Analysis of Noxious Facility Impacts on Local Wages and Property Values*, which attributes potential property value impacts near nuclear power plants to the “risk” of an accident and “public aversion” to nuclear plants. David Clark and Leslie Nieves, 27 J. of Env’l Econ. & Mgmt. 235, 236 n.4 & 250 (1994), excerpt attached hereto as Exhibit 1.
16. Dr. Sheppard also relies on a journal article entitled *Externalities of Nuclear Power Plants: Further Evidence*, which concludes that the author’s “data support the proposition that a public perception of nuclear risk causes a change in land prices.” Sherman Folland and Robin Hough, 40 J. of Reg’l Sci. 735, 749 (2000), excerpt attached hereto as Exhibit 2.
17. Council on Environmental Quality (“CEQ”) regulations state that an environmental impact statement must discuss economic or social impacts if they are interrelated with physical environmental effects. 40 C.F.R. § 1508.14.
18. The Generic Environmental Impact Statement (“GEIS”) contains the NRC’s generic findings regarding the environmental impacts of onsite spent fuel storage. The GEIS covers both radiological and non-radiological impacts (including land use and socioeconomic impacts) from spent fuel storage and rejects the need for further consideration of mitigation alternatives at the license renewal stage. NUREG-1437, Generic Environmental Impact Statement for License Renewal of Nuclear Plants at 6-84 to -86 (May 1996).
19. The GEIS finding regarding the environmental impacts of onsite spent fuel storage is codified in NRC regulations and provides that the “expected increase in the volume of spent fuel from an additional 20 years of operation can be safely accommodated on site with small environmental effects through dry or pool storage at all plants.” 10 C.F.R. pt. 51, subpt. A, app. B, tbl. B-1.
20. The Draft SEIS states that “[f]ull dismantling of structures and decontamination of the site may not occur for up to 60 years after plant shutdown.” Draft SEIS at 8-25.
21. NRC regulations require that decommissioning be completed within 60 years of permanent cessation of operations. 10 C.F.R. § 50.82(a)(3).
22. Entergy adopted a 60-year decommissioning timeframe for its site-specific program for managing spent fuel following permanent cessation of operations and its preliminary decommissioning cost estimate. J. E. Pollock, Entergy, to NRC Document Control Desk attach. 1, Table 7 (Oct. 23, 2008) (Unit No. 1 and 2, 10 CFR 50.54(bb) Program for Maintenance of Irradiated Fuel), available at ADAMS Accession No. ML083040378; *id.* encl. 2, fig. 1, at 26 (Preliminary Decommissioning Cost Analysis for the Indian Point Energy Center, Unit 2).

23. NYS states that "it is no longer realistic to assume that any wastes previously generated or to be generated at the Indian Point facility will be removed from the site within 30 years after the operation of the reactors." Answer of the State of New York to Hudson River Sloop Clearwater, Inc.'s Petition Presenting Supplemental Contentions EC-7 and SC-1 Concerning Storage of High-Level Radioactive Waste at Indian Point at 11 (Nov. 19, 2009).

Respectfully submitted,



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Dated in Washington, D.C.
this 26th day of February 2010

EXHIBIT 1

**Excerpt from David Clark & Leslie Nieves,
An Interregional Hedonic Analysis of Noxious
Facility Impacts on Local Wages and Property
Values, 27 J. of Env'l Econ. & Mgmt. 235 (1994)**

An Interregional Hedonic Analysis of Noxious Facilities:
Impacts on Local Wages and Property Values

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Since the early work of Rosen, Roback, and more recently Blomquist, Berger, and Hoehn, economists have recognized that local environmental amenities influence wage rates and property values jointly. Moreover, local differentials in these prices can be used to implicitly value local amenities. Unfortunately, much of the empirical work on noxious facilities has focused on a narrow range of facility types, often within a single city. Generally, distance from the facility is used to proxy exposure to the disamenity, although it is possible that the mere existence of a noxious facility in a region has an impact on local residents. We employ an intercity hedonic model to measure the joint property value and wage effects of a broad range of noxious facilities. Using Public Use Microdata from the 1980 United States Census, we show that property values and/or wages are significantly influenced by the existence of noxious facilities. Calculated implicit prices reveal that local residents are most averse to the presence of petrochemical refineries and nuclear power plants. © 1994 Academic Press, Inc.

1. INTRODUCTION

Claims of property value loss are commonly raised by homeowners when noxious facilities³ are sited or when new information about the hazards of existing facilities is made public. While the capitalization of externalities into land values is consistent with economic theory, empirical measurement of impacts for each type of facility individually has not generated consistent results. This is true both for hedonic measurements and for other types of econometric analyses. Although it is well established that job and site risks impact regional labor markets, there are no

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¹The authors acknowledge the helpful comments of Gary Hunt, George Treyz, Dennis Heffley, and three anonymous referees. In addition, we have benefitted from the insights of our colleagues at ANL and Marquette University, especially Gilbert Bassett, Ross Hemphill, Peter Toumanoff, Jim McGibany, and Steven Crane.

²Work supported by the United States Department of Energy, Office of Civilian Radioactive Waste Management, under Contract W-31-109-Eng-38.

³The term noxious is used to designate facilities that have been classified as locally undesirable land uses LULU's by Popper [4] and Smith and Desvousges [5].

studies relating the presence of a broad range of noxious facilities to local wage premiums.

In contrast, this study employs an interregional framework in an hedonic analysis of both wage and property markets to evaluate impacts of eight different categories of facilities. The approach offers several advantages. First, since multiple facility types are controlled, we can be more confident of the marginal impact of a particular type of facility. Second, the technique provides insights into the relative impact on property and labor markets of noxious facilities as a form of disamenity. It also permits calculation of an implicit price for each type of noxious facility that is composed of wage and property value impacts. The development of equitable compensation measures and the identification of social cost-minimizing siting criteria for noxious facilities are both dependent on the accurate estimation of impacts.

The remainder of this paper is divided into four sections. In Section 2, we contrast the intercity and intracity hedonic methods, both of which have been used to derive implicit prices for environmental amenities and disamenities. The third section gives a brief description of the intercity hedonic model. The unique data base and the structure of the estimated model are described in Section 4, and the final section contains a discussion of the findings and of directions for further research.

2. OVERVIEW OF HEDONIC MODEL

The hedonic model has its origins in the work of Lancaster [6] and Rosen [7] and has been applied to value amenities such as air quality (Ridker and Henning [8], Nelson [9], Harrison and Rubinfeld [10]), airport noise (Nelson [11]), and public safety (Thaler [12]). It has also been used to consider the impact of various types of noxious facilities such as nuclear plants (Gamble and Downing [13, 14], Nelson [15]), coal-fired power plants (Blomquist [16]), hazardous waste facilities (Harrison and Stock [17], Smith and Desvousges [5], Michaels and Smith [18], McClelland *et al.* [19]), chemical manufacturing (Baker [20]), and radioactive materials production [21]. Often, proximity to the site is used to measure impacts. The usefulness of this approach depends on several things. First, it requires an impact gradient for the facility which is relatively steep. Second, if distance is to provide an adequate measure, it must be the case that other amenities and disamenities, as well as employment opportunities, which are correlated with distance from the site, are controlled.⁴

Rosen [1] was the first to consider amenities in an intercity as opposed to intracity framework, and Cropper and Arriaga-Salinas [24] suggest that the inter-

⁴Hageman [22] notes that certain environmental goods (or bads) may have both positive and negative impacts on property values, depending on their influence on employment. For example, proximity to a nuclear power plant may reduce property values because of the increased risk in the event of an accident, while at the same time property values may increase if the plant is an important source of employment. Bender and Hwang [23] show that both primary and secondary employment centers must be controlled for when deriving the intraurban land rent function. In an attempt to avoid this problem in their study of a hazardous waste site, McClelland *et al.* [19] use a measure of perceived risk constructed from survey responses in a hedonic model. Their findings suggest that neighborhood risk perception does reduce local property value.

impact levels is the same, except in the case of chemical weapons storage and hazardous waste sites, which are reversed in order.

For comparative purposes, we present the findings for various other variables in the model. Among the urban size-related variables, suspended particulates and violent crimes are the two disamenities which are consistently (and significantly) classified as disamenities in both the wage and the housing rent equations. Local residents are willing to pay \$9.31 per year to avoid a 1.5% increase in the level of particulates and \$1.85 per year to reduce the number of violent crimes per thousand by 1 (which implies about \$8.32 to reduce it by 1% of the mean). In addition, they would be willing to pay \$103 per year to reduce the local unemployment rate by 1%, but only \$2.77 to reduce the cost of living by about 1%. A one-minute reduction in the mean commute is worth \$13.20 annually. Given that the hourly wage for the sample is \$6.98, this implies that commuting time is valued at approximately 24.1% of the wage.

The implicit prices on the FISCAL variables should be interpreted with care since none of them are derived from correctly signed and significant coefficients in both wage and housing rent equations. Indeed, the magnitudes of these prices are surprising in some cases. Residents appear to dislike local taxes (they would pay \$358 to avoid a \$1000 increase in taxes per capita) and spending from local sources (they would pay \$2977 to avoid a \$1000 dollar increase in spending). It is possible that they see an annual increase in local spending as a permanent increase in spending, and hence are willing to pay relatively large sums to avoid the additional spending. However, an implicit price that is more than three times the increase in spending certainly casts doubt on the precision of the estimate. Another somewhat surprising finding is that spending from nonlocal sources is treated as a good, worth \$1836 per year per \$1000 of additional spending. Again, the magnitude of the effect appears to be well above what is expected. One potential problem with the variables in this category may be related to the data itself. Unfortunately, given the level of aggregation of the PUMS data, we were forced to use community-wide average expenditure and tax measures. Given that local fiscal conditions can vary widely within metropolitan areas, it is possible that community-wide averages are a poor proxy for data that is jurisdiction specific.

In the NOXIOUS category, the implicit prices for only two types of facilities, nuclear power plants and petrochemical refineries, are based on significant coefficients in both models. The mean implicit price for petrochemical refineries (\$468) is the largest for the facility types studied. Since refineries are major air emission sources of sulfur oxides and volatile organic compounds (United States EPA [53]), the implicit price may reflect the deleterious effect of these emissions on air quality and cancer risks. We find that nuclear plants also have a relatively strong negative influence on local economies (\$143 for a representative household per facility in a 1000-square-mile area). This finding is inconsistent with results of authors who have applied an intracity modeling approach to data for relatively small local areas (Gamble and Downing [13, 14], Nelson [15]) and found little significant effect. Such studies have generally sought to identify an impact gradient that varies with distance from the plant and have not been structured in a manner that could reveal broad area impacts. Our results are consistent with the psychometric literature on public aversion to living or working near noxious facilities. Maderthaner *et al.* [54], Lindell and Earle [55], and Mountain West [56] all find relatively strong public aversion to proximity to nuclear plants. Of the nonnuclear

EXHIBIT 2

**Sherman Folland and Robin Hough,
Externalities of Nuclear Power Plants:
Further Evidence, 40 J. of Reg'l Sci. 735 (2000)**

EXTERNALITIES OF NUCLEAR POWER PLANTS: FURTHER EVIDENCE*

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ABSTRACT. Several prior studies found no detrimental external effects of nuclear power plants when estimating the distance gradient for housing prices within a hedonic model. Other papers found significant negative effects of nuclear power when studying real asset prices in cross sections of broad market areas. We suggest a resolution and verify that an installation effect occurs after controlling for the tendency of facility builders to seek out cheap land. The study assembles a panel of all commercial market areas, including indicators for nuclear facilities, in the contiguous United States observed 11 times over roughly equal intervals covering the span from 1945 to 1992.

1. INTRODUCTION.

The harm done to farmers by nearby nuclear facilities in the United States, must be the perception of risk, real or imagined, because history rarely involves a serious accident of relevance to the farmer. It is an understandable perception, because a nuclear leakage may cause him damage in two ways. First, as a businessman he may perceive the added risk as a depreciation of the expected present value of the profit stream from the land. Second, as spouse and parent he may worry about health consequences, a disamenity of living downwind from the facility. He may not be fully aware of agencies that insure him, or, as Tyran and Zweifel (1993) conclude, the available insurance may not fully cover the anticipated loss. In any case, a decline in land prices begins upon an announcement of the installation (Galster, 1986). Under one scenario, the expected present value of the land depreciates, the small probabilities of the land's diminishment acting much like physical depreciation factors. Under a second

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TABLE 5: Vintage Effects of Nuclear Power Facilities, Loglinear Form

Models: <i>nuclear</i> includes near BTAs	<i>Oldnuclear</i>	<i>Midnuclear</i>	<i>Newnuclear</i>	<i>Nuclear</i>
Panel, Period Effects, <i>Pre</i>	-0.108 (-3.9) [231]	-0.118 (-6.2) [557]	0.066 (2.4) [262]	-0.037 (-2.7) [1050]
Panel, Period Effects, <i>Pre1</i> , <i>Pre2</i>	-0.070 (-2.7) [231]	-0.085 (-4.8) [557]	0.121 (4.9) [262]	-0.039 (-2.8) [1050]
1959, Cross-section	-0.111 (-1.4) [16]	—	—	NA
1964, Cross-section	-0.110 (-1.3) [16]	—	—	NA
1969, Cross-section	-0.094 (-1.4) [22]	—	—	NA
1974, Cross-section	-0.115 (-2.1) [26]	-0.105 (-2.8) [69]	—	-0.066 (-2.2) [95]
1978, Cross-section	-0.177 (-2.6) [26]	-0.088 (-2.1) [81]	—	-0.087 (-2.4) [107]
1982, Cross-section	-0.152 (-2.3) [26]	-0.065 (-1.6) [81]	0.104 (1.5) [23]	-0.084 (-2.4) [130]
1987, Cross-section	-0.037 (-0.6) [26]	-0.053 (-1.4) [80]	0.068 (1.3) [36]	-0.012 (-0.4) [142]
1992, Cross-section	-0.011 (-0.2) [26]	-0.064 (-1.5) [80]	0.048 (0.8) [38]	-0.017 (-0.5) [144]

Notes: *t*-values in parentheses; number of unique occurrences of a year and a BTA at or near a nuclear power facility are in brackets. *Oldnuclear*, *midnuclear*, and *newnuclear* are dummy variables defining a reactor's presence for reactors of vintage pre-1970, 1970-1978, and post-1978, respectively. *Nuclear* defines the presence of a reactor regardless of vintage. Thus, regressions for *nuclear* are done separately and are omitted (NA = not applicable) for years during which only the "old" vintage reactors were present.

7. DISCUSSION AND CONCLUSIONS

The preponderance of significant, negative estimated effects across all varieties of models strongly suggests a negative nuclear externality and one that appears throughout the major portion of the nuclear era. Part of the observed negative effect on land prices is only apparent, most likely contributed by the actions of energy companies and governments who seek out cheap land for installations. Nevertheless, removing spurious effects leaves a significant negative installation effect.

A one-time adjustment in land asset values consistent with the theoretical account describes profit maximizers adjusting to the introduction of the perceived nuclear risk, much like equity markets adjusting to negative news regarding the future profit streams of a corporation. In the best-performing models we examined, those incorporating both preliminary land-price controls and nearby nuclear areas, the installation also alters the trend of land prices downward. Land prices continue downward after installation in the best-

performing and most complete models. Finally, the positive effects of recent vintage reactors are significant in the panel models. This result is consistent with several alternative hypotheses, including the idea that the public is more informed about reactor safety as well as the idea that the newer, modern reactors are safer and more safely managed.

Though these data do not resolve each of the questions raised, they reinforce the proposition that the discrepant findings in the literature derive less from error than from the alternative study designs. Comparisons across areas, which reported significant negative effects of nuclear power plant installation, are compatible with studies of variations within areas, which show little or no effect on housing prices due to the distance from the plant. If our conjecture is correct, a meta study reexamining the distance-gradient studies should show different asset-price levels when compared to matched nonnuclear areas.

Further, research that seeks to confirm these and related results may investigate population movements throughout the nuclear era. Although the absence of such movements is not sufficient to prove the absence of a public response to perceived risk, the finding of such movements is a strong confirmation of the externality hypothesis and will help to distinguish between the amenities models of nuclear effects versus the assets-depreciation model. Case studies of nuclear areas may be helpful, also. Selected assets may afford a richer sample for study if they are especially vulnerable to fears of radioactive contamination, for example: food processing; bottling of beer, water, and soft drinks; fisheries; or industries sensitive to elevated water temperatures.

Our data support the proposition that a public perception of nuclear risk causes a change in land prices, and that the reduction continues after installation and is associated largely with the middle and older vintage reactors. The data show an installation effect centering around 10 percent of land value. Inasmuch as the amount of land affected by a given installation may be large, (the effect is significant when applying a 60-mile radius) the loss in value could exceed tens of millions of dollars, an important additional consideration for installation or removal decision making. In the present climate of public opinion, the public logic more plausibly runs toward removal, and the perceived risk of harm from handling or storing nuclear waste may not be easily reversed. In any case, these findings add to the knowledge needed in cost/benefit determinations on the replacement of a perceived risky plant with a perceived safer one. All of these issues concern information as understood by the public, and they are pertinent to assessing the value of improved public information.

Finally, the results add to the importance of welfare economic theory regarding harmful external costs in cases where information is imperfect. Should a misperceived threat of an externality warrant compensation? Is it sufficient to show that the individual consumer has become fully informed and is acting voluntarily? Is it a sufficient defense for an energy company to show that the consumer's perceived fear is unscientific? Nevertheless, negative external effects exceeding 10 percent of asset value are real one-time costs to

some members of society relevant not only nuclear installation but also to decommissioning (Eyre, 1997; Ballard, Everett and Everett, 1991; Hall, 1990). The economic approach to efficiency requires the recognition of these external costs as well as their internalization into the calculus of nuclear energy decisions.

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APPENDIX

Derivations in Detail for The Predicted Effects:

Define the tenants profit as

$$(A1) \quad \Pi = p_G Q - C(Q; r, p_L) - \gamma(D, p_D) Q$$

where p_G is the price of the farm produce, for example, grain, which is assumed by the tenant to be fixed; Q is the quantity of farm product; costs C which are a

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	Docket Nos. 50-247-LR and
ENTERGY NUCLEAR OPERATIONS, INC.)	50-286-LR
(Indian Point Nuclear Generating Units 2 and 3))	
	February 26, 2010

CERTIFICATE OF SERVICE

I hereby certify that copies of the "Entergy Nuclear Operations, Inc. Motion for Summary Disposition of New York State Contention 17/17-A (Property Values)" and "Statement of Material Facts on Which No Genuine Dispute Exists" dated February 26, 2010, were served this 26th day of February, 2010 upon the persons listed below, by first class mail and e-mail as shown below.

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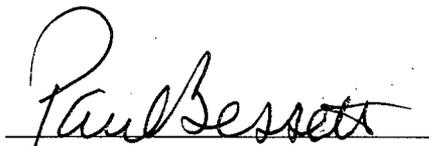
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